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ROUTING AND RECORD SHEET

SUBJECT: (Optional)

FROM: OC-E/R+D-EP

NO.

DATE: 2 April 1958

TO: (Officer designation, room number, and building)	DATE RECEIVED	DATE FORWARDED	OFFICER'S INITIALS	COMMENTS (Number each comment to show from whom to whom. Draw a line across column after each comment.)
1. R+D	4/4			Information 1-10 Recommend discussion with & approval by O&T. Agree JJK
2.				
3.				
4.				
5. OC-E			JJK	Information
6.				
7.				File new project file.
8.				
9.				
10. EP				ACTION ~~Filing~~ O&T/SB has copy. Has verbally endorsed plan with enthusiasm and will forward written approval.
11.				
12.				
13.				
14.				Above opinion rescinded, Memo re-written as memo To O&T for JK.
15.				

FORM 1 DEC 56 610 USE PREVIOUS EDITIONS ☒ SECRET ☒ CONFIDENTIAL ☐ INTERNAL USE ONLY ☐ UNCLASSIFIED

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : The Files CONFIDENTIAL DATE: 2 April 1958

FROM : [redacted] STAT

SUBJECT: RT-11 [redacted] - Laboratory Conference 50X1

1. Problem - There is an informal agreement that the RT-11 [redacted] is not satisfactory for production as presently designed. The reasons are multiple but can be broadly attributed to: (a) presently known new and improved design techniques, (b) the continual sloping characteristic of the contractor's capability [redacted] changed hands four times during the course of the contract, and (c) the very real problem of powering the transmitter with the type BA-1315/U mercury battery. The undersigned conferred with [redacted] at the laboratory to consolidate recommendations for minimum redesign to provide a unit satisfactory for production. 50X1 50X1 STAT

2. Battery Power Supply - There are a number of minor deficiencies that affect the equipment reliability and these faults could possibly be corrected in production; however, the major deficiency is the mercury battery around which this equipment was designed. The equipment specifications were written around the BA/1264/U. At the time of contract award the BA-1264/U was withdrawn from production and the BA-1315/U was submitted. (In fact, the first production runs of the new battery were stamped BA-1264/U). Although the new battery was to be an exact replacement for the old, the battery capacity of the BA-1315/U is considerably reduced.

	BA-1264/U	BA-1315/U
A	25,600 MAH	14,500 MAH
B	600 MAH	500 MAH

Other problems with the battery concern the very poor performance at reduced temperatures and lack of a bias voltage.

3. DC to DC Converter - In view of the above, it is recommended that mercury batteries be eliminated as a power source for the RT-11 transmitter and that a DC to DC converter be provided within the equipment for operation with any 12 volt battery source.

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4. Other Deficiencies - Were such a scheme to meet with approval, a solution to other design "bugs" would appear simultaneously as follows:

Fault	External keying requires breaking 200 volts at 100 ma and is severe for any contact point of external keyers. The pin jacks for external keying are "hot."
Solution	The DC to DC converter would provide a badly needed bias voltage for grid block keying.
Fault	Reliance on a lamp glow as a tuning indicator when loading into random antenna impedances is not good.
Solution	A meter with function switch would be provided for tuning as well as reading battery voltage.
Fault	Poor reliability of the printed board switch.
Solution	Laboratory has a solution at hand - a new "off the board" switch.

5. Frequency Coverage - It might also be considered at this time whether a small increase in size is warranted to provide a 3 to 30 megacycle coverage rather than two separate equipments, one to cover 3 to 12 megacycles and the other 12 to 30 megacycles, as in the present equipment.

6. Recommendations - It is recommended that an RT-11 "clean-up" be undertaken by the laboratory in accordance with the above. [redacted] indicated that a breadboard unit could be constructed in two weeks. A hardware package would require an additional 4 months.

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[redacted]